CIVIL FUNCTIONS, DEPARTMENT OF THE ARMY APPROPRIATIONS, 1952

FRIDAY, JULY 6, 1951

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met at 10:30 a. m., pursuant to recess, in room F-49, the Capitol, Hon. Kenneth McKellar (chairman), presiding.

Present: Senators McKellar, Ellender, McClellan, Robertson, Young, Cordon, Ecton, Stennis, and Cain.

Present also: Senator Long.

CORPS OF ENGINEERS

RIVERS AND HARBORS—FLOOD CONTROL

STATEMENT OF BRIG. GEN. P. A. FERINGA, PRESIDENT, MISSISSIPPI RIVER COMMISSION

MISSISSIPPI RIVER AND TRIBUTARIES

Funds available for obligation

	1950 actual	1951 estimate	1952 estimate
DIRECT OBLIGATIONS			
Appropriation or estimate	$67,000,000	$66,422,400	$61,000,000
Prior year balance available	1,313,586	650,105	
Total available for obligation	68,313,586	67,072,505	61,000,000
Balance available in subsequent year	−650,105		
Unobligated balance, savings under sec. 1214		−5,022,000	
Total direct obligations	67,663,481	62,050,505	61,000,000
REIMBURSABLE OBLIGATIONS			
Reimbursements for services performed	661,170	539,250	500,000
Payments received from non-Federal sources	558,420	528,150	500,000
Total reimbursable obligations	1,219,590	1,067,400	1,000,000
Total obligations	68,883,071	63,117,905	62,000,000

Obligations by activities

Description	1950 actual	1951 estimate	1952 estimate
DIRECT OBLIGATIONS			
MAJOR CAPITAL OUTLAY			
1. Construction (lower Mississippi River and tributaries):			
(a) Main-stem work	$32,246,716	$26,968,675	$30,650,000
(b) Off-main-stem work	21,027,139	20,141,498	15,850,000
CURRENT EXPENSES			
1. Maintenance (lower Mississippi River and tributaries):			
(a) Main-stem work	11,497,766	12,400,932	13,000,000
(b) Off-main-stem work	2,738,769	2,386,900	1,335,000
2. Administration (salaries, Office, Chief of Engineers, allotment roll)	153,091	152,500	165,000
Total direct obligations	67,663,481	62,050,505	61,000,000
REIMBURSABLE OBLIGATIONS			
MAJOR CAPITAL OUTLAY			
1. Construction (lower Mississippi River and tributaries):			
(a) Main-stem work:			
(1) Treasury Department, United States Coast Guard	226,640	228,600	228,600
(2) Navy Department	12,927	13,500	13,500
(3) Department of Army (military functions)	60,261	50,000	50,000
(4) United States Air Force	61,600	41,000	41,000
(5) Other Federal agencies	20,714	17,150	15,000
(6) Non-Federal agencies	192,961	219,750	221,900
(b) Off-main-stem work (non-Federal agencies)	2,463	5,000	5,000
CURRENT EXPENSES			
1. Maintenance (lower Mississippi River and tributaries):			
(a) Main-stem work:			
(1) Treasury Department, United States Coast Guard	67,664	65,000	21,400
(2) Navy Department	24,000	13,700	16,500
(3) Department of Army (military functions)	125,361	68,000	70,000
(4) United States Air Force	61,661	42,000	44,000
(5) Non-Federal agencies	362,964	303,300	273,000
(b) Off-main-stem work (non-Federal agencies)	32	100	100
2. Administration (salaries, Office, Chief of Engineers, allotment roll) (other Federal agencies)	342	300	.....
Total reimbursable obligations	1,219,590	1,067,400	1,000,000
Total obligations	68,883,071	63,117,905	62,000,000

Obligations by objects

Object classification	1950 actual	1951 estimate	1952 estimate
CORPS OF ENGINEERS			
SUMMARY OF PERSONAL SERVICES			
Total number of permanent positions	5,130	5,106	4,934
Full-time equivalent of all other positions	1,349	1,276	1,070
Average number of all employees	5,792	5,821	5,475
Personal service obligations:			
Pay and allowances to commissioned officers	$116,283	$116,289	$116,301
Permanent positions	15,076,951	15,715,200	15,527,175
Part-time and temporary positions	3,255,739	3,084,800	2,585,500
Regular pay in excess of 52-week base	57,896		59,625
Payment above basic rates	2,430,348	2,030,000	2,030,000
Total personal service obligations	20,937,217	20,946,289	20,318,601
Deduct charges for quarters and subsistence	527,115	526,600	526,600
Net personal service obligations	20,410,102	20,419,689	19,792,001
01 Personal services:			
Civilian	19,888,341	19,949,000	19,343,700
Pay and allowances to commissioned officers	116,283	116,289	116,301
02 Travel	779,142	600,000	500,000
03 Transportation of things	180,267	179,000	175,000
04 Communication services	133,065	124,900	123,900
05 Rents and utility services	428,260	435,000	500,000
06 Printing and reproduction	4,521	5,000	5,000
07 Other contractual services	1,483,044	1,200,000	1,199,500
08 Supplies and materials	11,822,597	10,097,856	10,998,900
09 Equipment	2,161,995	2,000,000	2,000,000
10 Lands and structures	30,655,597	27,332,216	26,027,699
13 Refunds, awards, and indemnities	7,137	5,000	5,000
Total direct obligations	67,660,249	62,044,261	60,995,000
REIMBURSABLE OBLIGATIONS			
01 Personal services: Civilian	$405,478	$354,400	$332,000
02 Travel	15,470	14,000	12,000
03 Transportation of things	8,509	8,000	5,000
04 Communication services	581	500	400
05 Rents and utility services	53,830	50,000	50,000
07 Other contractual services	192,028	196,000	215,000
08 Supplies and materials	162,584	150,000	100,000
09 Equipment	381,110	294,500	285,600
Total reimbursable obligations	1,219,590	1,067,400	1,000,000
Total obligations	68,879,839	63,111,661	61,995,000
ALLOCATION TO GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR			
Full-time equivalent of all other positions	1	1	1
Average number of all employees	1	1	1
01 Personal services: Part-time and temporary positions	$2,102	$4,000	$3,300
04 Communication services	52	100	100
07 Other contractual services	349	700	500
08 Supplies and materials	729	1,444	1,100
Total obligations	3,232	6,244	5,000
SUMMARY			
SUMMARY OF PERSONAL SERVICES			
Total number of permanent positions	5,130	5,106	4,934
Full-time equivalent of all other positions	1,350	1,277	1,071
Average number of all employees	5,793	5,822	5,476
Personal service obligations:			
Pay and allowances to commissioned officers	$116,283	$116,289	$116,301
Permanent positions	15,076,951	15,715,200	15,527,175
Part-time and temporary positions	3,257,841	3,088,800	2,588,800
Regular pay in excess of 52-week base	57,896		59,625
Payment above basic rates	2,430,348	2,030,000	2,030,000
Total personal service obligations	20,939,319	20,950,289	20,321,901
Deduct charges for quarters and subsistence	527,115	526,600	526,600
Net personal service obligations	20,412,204	20,423,689	19,795,301

Obligations by objects—Continued

	Object classification	1950 actual	1951 estimate	1952 estimate
	DIRECT OBLIGATIONS			
01	Personal services:			
	Civilian	$19,890,443	$19,953,000	$19,347,000
	Pay and allowances to commissioned officers	116,283	116,289	116,301
02	Travel	779,142	600,000	500,000
03	Transportation of things	180,267	179,000	175,000
04	Communication services	133,117	125,000	124,000
05	Rents and utility services	428,260	435,000	500,000
06	Printing and reproduction	4,521	5,000	5,000
07	Other contractual services	1,483,393	1,200,700	1,200,000
08	Supplies and materials	11,823,326	10,099,300	11,000,000
09	Equipment	2,161,995	2,000,000	2,000,000
10	Lands and structures	30,655,597	27,332,216	26,027,699
13	Refunds, awards, and indemnities	7,137	5,000	5,000
	Total direct obligations	67,663,481	62,050,505	61,000,000
	REIMBURSABLE OBLIGATIONS			
01	Personal services: Civilian	405,478	354,400	332,000
02	Travel	15,470	14,000	12,000
03	Transportation of things	8,509	8,000	5,000
04	Communication services	581	500	400
05	Rents and utility services	53,830	50,000	50,000
07	Other contractual services	192,028	196,000	215,000
08	Supplies and materials	162,584	150,000	100,000
09	Equipment	381,110	294,500	285,600
	Total reimbursable obligations	1,219,590	1,067,400	1,000,000
	Total obligations	68,883,071	63,117,905	62,000,000

Chairman McKellar. The committee will come to order.

Senator Robertson. Before we take up the testimony of the General this morning, I want to make a motion and have it pending in case I fail to be here when the item is reached.

CHANGE IN NAME OF BUGGS ISLAND

The House inserted language in this bill changing the historic name of Buggs Island to the John H. Kerr Dam. Congressman Kerr is a very distinguished man and a fine friend of ours in the House and active in behalf of Buggs Island, but we do not think that in order to honor a distinguished member of the other body a historic name in Virginia should be changed. The people in Virginia are very much opposed.

Chairman McKellar. How did it get the name of Buggs Island?

Senator Robertson. It was long before the Revolutionary period. I do not know the origin of the name Buggs, but a man honored it and it was a very respected name and a well identified locality. It has been Buggs Island ever since. Incidentally, it is in Virginia, not in North Carolina.

When they started to build a dam there they took the historic name of the locality and called it the Buggs Island Dam. Now it is referred to in all the hearings in that way and the authorizations and all these various appropriation bills for the last 5 years as Buggs Island Dam. There is a Kerr Dam out in the West somewhere. Aside from that it would be very confusing if what was Buggs Island is no longer Buggs Island but the John H. Kerr Dam.

MOTION PENDING

I want this motion to be pending that this legislation on the appropriation will be struck tout.

Chairman McKellar. The amendment was introduced by Louis Rabaut of Detroit.

Senator Robertson. It is a nice friendly gesture, but it does not have to go any further than the House, you know.

Chairman McKellar. I like Judge Kerr very much. He is a grand man. It strikes me as a very peculiar name.

Senator Cordon. How large an island is Buggs Island?

Senator Robertson. If I had the privilege of naming the island, I would give it another name. There are a lot of names that come down through antiquity that have significance which we do not appreciate.

SIZE OF ISLAND

Senator Cordon. How large is Buggs Island, if it is an island?

Senator Robertson. It is a relatively small spot. If they want to give it a great historic name, they could name it the John Randolph Dam because John Randolph was known as John Randolph of Roanoke. There were a lot of Randolphs in those days and in those days you identified the man by the name of his county seat, and his county seat was on the Roanoke River. He was known as John Randolph of Roanoke. If they had wanted to give a historic name, they should have chosen one of the real orators of the Nation, a man who served in the House, who served in the Senate, who was Ambassador to France, a very distinguished man, and they could have called it the John Randolph Dam—John Randolph of Roanoke Dam.

Anyway, it is now thoroughly identified in a particular locality, Mecklenburg County, as Buggs Island, and that is what they want.

Chairman McKellar. That motion may be pending.

I shall insert at this point a table with reference to the appropriation for flood control work on the Mississippi River and tributaries.

Flood control, Mississippi River and tributaries—preliminary breakdown, fiscal year 1952—June 28, 1951

Item of work	Total estimated Federal cost	Appropriation, fiscal year 1951	Total amount appropriated to date	Corps of Engineers' original estimate for 1952		Budget estimate, 1952, new appropriation	Amount allowed by House	Restoration
				Within ceiling	Over ceiling			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Construction:								
Main stem, Mississippi River:								
Mississippi River levees	$271,000,000	$5,500,000	$198,392,210	$6,000,000	$7,785,000	$4,000,000	$3,830,000	$170,000
Bank stabilization work	356,000,000	19,800,000	178,504,498	23,000,000	41,955,000	18,000,000	17,200,000	800,000
Dredging	103,245,280	0	87,017,821	0	2,000,000	0	0	0
Mapping	4,863,000	245,000	3,076,825	380,000	380,000	250,000	250,000	0
Memphis harbor	21,600,000	1,250,000	6,095,000	2,000,000	3,000,000	1,400,000	1,350,000	50,000
Devils Swamp	2,500,000	0	0	500,000	1,250,000	0	0	0
Morganza structure	20,680,000	5,700,000	8,853,000	7,180,000	9,677,000	7,000,000	6,690,000	310,000
Completed items of work	23,248,615	0	23,248,615	0	0	0	0	0
Subtotal	803,136,895	32,495,000	505,187,969	39,060,000	66,047,000	30,650,000	29,320,000	1,330,000
Off main stem work:								
St. Francis Basin	44,826,000	510,000	15,941,235	655,000	1,217,000	500,000	500,000	0
West Tennessee tributaries	7,700,000	0	0	255,000	623,000	0	0	0
Lower White River	13,110,000	0	7,601,490	228,000	511,000	0	0	0
Cache River Basin	10,000,000	0	0	0	473,000	0	0	0
L'Anguille River	2,000,000	0	0	0	340,000	0	0	0
Grand Prairie-Bayou Meto	6,000,000	0	0	0	944,000	0	0	0
Lower Arkansas River:								
North bank	11,910,000	240,000	1,924,290	1,552,000	2,447,000	500,000	500,000	0
South bank	17,340,000	0	12,503,406	0	391,000	0	0	0
Yazoo River Basin:								
Reservoirs	74,898,000	8,690,000	56,384,717	6,347,000	8,115,000	6,437,000	6,127,000	310,000
Local protection	99,102,000	1,000,000	9,770,496	853,000	3,448,000	353,000	353,000	0
Big Sunflower	7,500,000	0	162,000	345,000	2,920,000	0	0	0
Tensas River Basin:								
Boeuf and Tensas	20,770,000	675,000	3,026,000	1,987,000	3,798,000	1,800,000	1,720,000	80,000
Red River backwater	29,000,000	562,000	3,101,313	2,013,000	3,020,000	1,260,000	1,200,000	60,000
Grants Canal	11,000	0	0	0	0	0	0	0
Lower Red River	10,360,000	125,000	8,348,647	300,000	300,000	200,000	200,000	0
Atchafalaya River Basin:								
Levees and structures	124,830,000	2,423,000	91,820,402	5,438,000	12,093,000	4,738,000	4,518,000	220,000
Bayou Rapides, Boeuf and Cocodrie	4,290,000	80,000	3,418,000	62,000	872,000	62,000	62,000	0
Lake Pontchartrain	3,150,000	0	0	315,000	315,000	0	0	0
Amite River	50,000	0	0	0	50,000	0	0	0
Completed items of work	2,764,605	0	2,764,605	0	0	0	0	0

Subtotal	489,611,605	14,305,000	216,766,601	20,440,000	41,877,000	15,850,000	15,180,000	670,000
Total construction	1,292,748,500	46,800,000	721,954,570	59,500,000	107,924,000	46,500,000	44,500,000	2,000,000
Maintenance:								
Main-stem work		12,297,900		13,333,700	13,333,700	13,000,000	13,000,000	
Off main-stem work		2,150,000		1,485,000	1,485,000	1,335,000	1,335,000	
Administration (salaries, Office, Chief of Engineers allotment roll)		152,500		181,300	181,300	165,000	165,000	
Total maintenance		14,600,400		15,000,000	15,000,000	14,500,000	14,500,000	
Grand total		61,400,400		74,500,000	122,924,000	61,000,000	59,000,000	

Off main stem work:

Now, General Feringa, we will hear from you.

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES

General FERINGA. I am Brig. Gen. P. A. Feringa, president of the Mississippi River Commission. I am stationed at Vicksburg, Miss., and I am here to testify on the project known as the Mississippi River and tributaries project. That project, as all the members of the committee know, is an extremely important one. It safeguards the Mississippi Valley, the alluvial valley, which of course is an important sector of the United States.

The project is one project, it is flood control and it is navigation, and those two elements cannot be divided; they are interdependent.

MISSISSIPPI RIVER COMMISSION

The Mississippi River Commission of which I am the president was started in 1879. It is composed of seven members appointed by the President by and with the consent of the Senate. The Commission is set up on the basis by law that there must be three officers of the Corps of Engineers, one of whom must be the president, and three civilian members and a seventh member is a member of the Coast and Geodetic Survey. The three civilian members are two civil engineers, they must be civilian civil engineers, and one must be a businessman, a successful businessman. So there, as the committee will perceive, is a commission started in 1879 by the Congress, which gives a very good cross section of business qualification, civilian engineering, Army engineering, and Coast and Geodetic Survey mapping knowledge. I am proud to be a member of that Commission and I am proud to be president of that Commission.

NEED FOR PROJECT

The 1927 flood, which is the greatest flood that the valley has had since 1844, demonstrated to the Congress, to the country—and I have a great respect for the Congress and I always feel that Congress is responsive to the needs of the United States—the need for the United States to help in taking care of this valley so that this valley would be an asset instead of a debit.

Chairman MCKELLAR. I am pleased to hear that statement, because Congress rarely receives praise up here.

General FERINGA. Congress gets my praise and appreciation every time, sir, because I have worked with you.

Senator CORDON. May I interrupt to ask a question?

General FERINGA. Yes, sir.

Senator CORDON. Prior to that time was there any concerted effort to hold Old Man River within its banks?

PRIOR TO 1927—NO CONCERTED EFFORT

General FERINGA. No concerted effort, but since way before the Revolutionary War piecemeal efforts were made by individuals doing this and doing that, assisted by State, county, and parish, but no concerted effort.

Chairman McKellar. General, I would like to answer his question. Opposite Memphis the area was covered with water over to the county seat, Crittenden County, over half the time. The land was not considered of any value, you could not expect to make a crop on it. You had to take a chance with the small part of it that was cultivated. Since that time it has been leveed, and that enormous tract of land has grown up not only to be a great farming country but West Memphis is a town that has grown there.

Senator Gordon. How large an acreage is there?

Chairman McKellar. I could not give the acreage. There are thousands of acres. It is about 10 miles across to the county seat.

General Feringa. West Memphis stretches out over a large area.

Chairman McKellar. It used to be a bog and a very filthy bog, too, because the water stood there a long time in the summertime and it rarely ever dried up.

SITUATION IN THE DELTA

Senator Stennis. Further south from Memphis, the Mississippi Delta there, on thousands and thousands of acres there for almost a hundred years they levied taxes that were enormous for them to carry. The assessments were so much per cotton bale, so much per acre, trying to build adequate levees. But they were never able to cope with the situation in spite of all they did. Their investment runs into millions and millions of dollars antedating the Federal project.

PROBLEM IN LOUISIANA

Senator Ellender. If I may be permitted to put in my little bit, I own a little property in Houma. That whole area was formed into a district, in order to contribute funds to build levees to hold these waters, and today I am paying on that little piece of property of mine 5¼ mills tax to pay for levees that were built long ago.

Anyhow, to answer the question specifically, the whole of south Louisiana, that is, from the Atchafalaya River east, contributed considerably and is probably contributing considerably for the bond issues that were made years back in order to carry out this project.

I believe, General Feringa, that the disastrous flood of 1927 was really and truly what caused Congress to see the light and enact the Flood Control Act of 1928.

Chairman McKellar. It had more to do with it than anything else.

Senator Ellender. I think so, because that was terrible. I saw it at the time. The damage done there it was estimated ran over $2 billion.

Senator Robertson. Why is it that all the chambers of commerce, starting with the United States Chamber and coming to the little chambers refer to everything that is done on the Mississippi River as pork barrel?

Senator Ellender. I do not know, Senator.

Senator Stennis. It is just ignorance.

Senator Ellender. Ignorance, that is right, and to be frank with you, it may be that in some cases there were maybe two or three con-

tracts on which some money was made over and above what should have been made.

General FERINGA. No, sir, not in the Corps of Engineers, and not in the Mississippi Valley.

Senator ELLENDER. That difficulty originated before, in other words, when the States had it. Some of the States let contracts and there was some talk of overpayment. I know in my area there was, and it may be that the name originated then. It is purely out of ignorance that this misnomer has been passed around.

General FERINGA. I had no idea the term "pork barrel," which is one I dislike very much, was ever applied to the Mississippi Valley. It may well have been, you know; you read of so many other things. I have heard it applied to other projects. If it was applied by the United States Chamber of Commerce then, I hope that somebody from that Chamber of Commerce comes down to see me, for personal observation and study.

INCREASE IN 1951 FUNDS

Senator ROBERTSON. The biggest increase that the Senate made last year in the civil-functions bill over the House bill was for the Mississippi flood-control work. That touched off a big debate with the Senator from Illinois who offered a motion to cut it in half. I voted to uphold the position that the committee had taken and my senior colleague voted the other way. That put me over the famous barrel.

Senator STENNIS. Mr. Chairman, may I take 1 minute to point out to these gentlemen the condition before this 1928 act?

From Greenville over to Greenwood it is something like 85 to 90 miles and this other distance here is in proportion. This is the Mississippi Delta. I have seen motor boats running all over this territory from Greenwood to Greenville in the flood of 1927. That was the only method of transporation from Marks down here, by motorboats. Water was 26 feet deep all over that country. It came in when the levees broke. It washed away freight trains going down the tracks on their normal run. Since this program has come in there has not been another flood.

RIVER STAGE VARIATION

Senator CORDON. What is the average elevation of the delta area above the mean water level of the river?

General FERINGA. I suppose the mean water level of the river is just a couple feet below the average elevation of the delta. It is very flat country, very rich country. You can go down indefinitely and have rich soil.

Senator CORDON. What was the height of the flood water above the mean on that portion of the river where the banks were stabilized?

General FERINGA. I estimate 20 or 30 feet. That may be high, but I know at Vicksburg the gage varies from 0 to about 60 feet. The river now stands at 28.9 at Vicksburg.

Chairman MCKELLAR. If the general will permit me, I do not think there is any mean level. I have seen that river too often overrunning everything.

General FERINGA. You see, the banks of the Mississippi are higher generally than the country farther inland, and if the river ever gets over those banks, then it keeps on over that land until it finally finds its way out, like in that instance at the mouth of the Yazoo River, and it keeps on going.

Senator ROBERTSON. How much cotton is raised in that area between the Mississippi and the Yazoo that the Senator from Mississippi just referred to as the Delta?

General FERINGA. I do not know in bales, Senator. It is a tremendous amount of cotton, and fine cotton. Recently the economy has been turning to cattle in addition to cotton. I cannot give you the figures in bales, sir.

EXTENT OF FLOOD PLAIN

Senator CORDON. May I inquire, General, as to whether the uncolored area on the map represents what one might term the potential flood plain of the river and its tributaries?

General FERINGA. Yes, sir; the uncolored area is the flood plain. The colored area shows the area above the flood plain. That of course is a map which illustrates the project but it is accurate to depict the problem.

Senator CORDON. Is it reasonably accurate from a scale standpoint as to miles of flood plain?

General FERINGA. Yes, sir.

Senator CORDON. The whole of that white area has at one time or another been under flood?

General FERINGA. It has been under high water; yes, sir. For instance, talking about Senator McKellar, he is known up and down the valley, but where he is known especially and where people love and respect him the most, is around Memphis. Now suppose that levee about 15 miles below Memphis is breached, then that water will not come back to the river in short order; it will find its way all the way down the Yazoo Valley, covering everything, and finally come down to about Vicksburg, because, talking about the over-all picture, the banks of the river are generally higher than the area farther inland and before the hill line.

Senator CORDON. When a flood spreads over that vast area it loses its force as far as current is concerned?

FLOODS DESTRUCTIVE

General FERINGA. Eventually it does, yes, sir, but it is a destructive thing, sir. It is not a beneficent flood like the Nile floodwaters. I have seen land even after the 1950 high water, right above Memphis, right along in here where work is not complete near the mouth of the Obion River, where locally constructed levees were breached and where, when the water receded, you could see 2 or 3 feet of coarse sand where a man's farm is ruined. A person might think, "Let us have these floods," because after all you read about the Nile and it is wonderful and it enriches the land. It does not happen that way, in the Mississippi Valley.

Senator CORDON. That means that a flood of the type you mention might be termed a foreign flood, it has its origin miles away, so that

it comes down with a very considerable head in order to have the heavy current?

General FERINGA. Yes, sir You would never have any floods in the alluvial valley if you could shut off the Ohio, the upper Mississippi and the Missouri. This water comes from as far east as New York and as far west as Montana, and as far north as into Canada. That is the water with which we have to contend.

Senator STENNIS. Thirty-three states are drained in part through that river.

General FERINGA. That is correct, sir. It is a wonderful project, sir.

Senator CORDON. I take it a big flood results from a coincidental flooding in all those upper tributaries?

General FERINGA. The 1927 flood came near that point. Fortunately all the tributaries have never been synchronously in flood at the same time, and I do not think they ever will be, but when they get close to being in cycle that is when we have to look out, sir. In 1950, which was the fourth highest water since 1844, the flood came out of the Ohio.

Senator CORDON. For the record I should like to have you state the approximate number of acres within the flood plain that is protected by reason of the levees and bank stabilization and other protective works along the river and its tributaries.

General FERINGA. There are 20,000,000 acres and about 12,000,000 acres that are fully protected and 3,000,000 are protected to greater or lesser degree by our flood protective works.

Senator STENNIS. There are 20,000,000 acres and 15,000,000 of them are protected?

General FERINGA. To a greater or lesser degree, yes, sir.

Senator MCCLELLAN. You might add, too, that is the richest land in the world in that valley.

PRODUCTIVE VALLEY

General FERINGA. I used to think before I had my present job that I would settle in the eastern part of the United States. I have changed my opinion. I am going to settle somewhere along the Mississippi Valley.

Senator MCCLELLAN. That whole valley that is represented there on the map, that area that is being protected by these works, is the most productive land in the world.

General FERINGA. It is wonderfully productive. All it needs is a utilization of the water instead of being afraid of it.

Senator MCCLELLAN. I think that you will find that more than half of the cotton we produce in the United States is produced in that area there that is under this flood-control protection.

Chairman MCKELLAR. We want to get the figures on how much is produced, but I am sure that that uncolored area down to the Mississippi Delta produces more cotton than any other like area in the world.

Senator MCCLELLAN. I think you will find it produces about 50 percent of all the cotton produced in the United States.

Chairman MCKELLAR. We will get the exact figures.

(The information required is as follows:)

Comparative figures on cotton production

[Figures in bales]

Year	Yazoo-Mississippi Delta [1]	Entire United States [2]	Total for world [2]
1948	1,328,500	14,900,000	29,200,000
1949	890,000	16,100,000	30,900,000
1950	787,100	[3]	[3]

[1] Department of Agriculture—County agent.
[2] World Almanac.
[3] Not available.

Chairman McKellar. A little while ago Senator Robertson referred to increases recommended last year by the Senate Committee on Appropriations over House allowances and stated that the biggest increase made was for the Mississippi River flood-control work.

I want to correct the record on that point. The bill as reported to the Senate by our commiteee was $132 million more than was allowed by the House. The increase for the Mississippi River flood-control work was $1.7 million, but still some $5 million below the budget estimate, and a small decrease under the 1950 appropriation.

Senator McClellan. You mean over the House figure?

Chairman McKellar. It was $1,770,000 under the House figure.

Senator Cordon. I note on this table 3 that the total estimated Federal cost of construction, main stem and off stem works is $1,292,748,500.

General Feringa. That is correct, sir.

Senator Cordon. Of which there has already been appropriated $721,954,570.

General Feringa. That is correct, sir.

ADEQUACY OF PROJECT COSTS

Senator Cordon. Now what is your view as to whether the construction herein set forth totaling substantially $1,300,000,000 will be adequate from the standpoint of the basic construction necessary for protection of the flood plain of the Mississippi River?

General Feringa. I know it is adequate, sir. When that money is expended the project will be finished unless additional work is added thereto by the Congress. The project is a wonderful one to work with because it all dovetails, it all fits. What you do upstream fits with what you do downstream; work which you do downstream fits with what you do upstream.

Senator Cordon. You have put in a condition there about which I might inquire. You say unless additional work may be directed by the Congress.

General Feringa. Yes, sir.

Senator Cordon. Of course Congress will be responsive in the future, I suspect, as it has in the past, to calls for assistance if assistance be necessary. My question is as to whether we can reasonably believe that additional major construction beyond that set out here will not be necessary.

General Feringa. You can, sir.

MAINTENANCE COST

Senator CORDON. If we may assume that the maintenance, which now represents around $15 million a year, is continued?

General FERINGA. That is not included in that figure, sir.

Senator CORDON. I understand. I say, if we assume that funds for maintenance will be always provided annually?

General FERINGA. That is right, sir.

Senator CORDON. I take it that that maintenance figure of around $14,500,000 will probably at the present value of the dollar double when the whole construction project is completed. Would that be a reasonable figure for it?

General FERINGA. That would be a reasonable figure, and if the dollar stays at the present value I think you can keep on maintaining that project for $15 million indefinitely. And, more, I believe that the maintenance will be decreased if we can ever get along fast enough with our revetments because that is where the greatest element of our maintenance goes. It is a whole lot more costly to maintain a house with a leaking roof than a house with a roof that is tight.

Senator CORDON. What has been your experience as to the permanency of the revetment work?

REVETMENTS

General FERINGA. Generally speaking, we design those revetments for 20 years, and there are any number of miles of revetments in place that have been in place over 20 years and still in good shape. They fail where we cannot go far enough upstream or downstream because of lack of funds and then they are flanked just like a military movement. If you cannot tie your flanks down, you are in a vulnerable position and you are going to get it. That is exactly the way it is in the Mississippi River. If you can't go far enough up or down, and you will see item after item where there is a good piece of revetment, where there will be a scallop on the downstream end and a scallop on the upstream end due to the fact that the revetments were flanked because we had insufficient funds to go as far as necessary.

Senator ROBERTSON. I would like very much for the general to indicate what work in his opinion is necessary and which would contribute directly to the defense effort and state what that would cost in excess of the figure allowed by the House. We cannot do everything that is necessary to be done on the Mississippi River in this bill. It is going to strain some of us even to go with what the House allowed. But the purpose of the hearings is to find out whether or not the House overlooked something that is really critical and necessary in the production of the fiber and food and the preservation of human life because, as St. Paul said, we are all of one body, and he is certainly correct.

Chairman MCKELLAR. How long has it been since we have had what is known as a break in the levees where it just floods the whole business? It has been many years, has it not?

NO DISASTER SINCE 1927

General FERINGA. We have had no real disaster, Senator McKellar, since 1927.

Chairman MCKELLAR. It is my recollection that was the last big disaster we had.

Senator MCCLELLAN. You had a break-up near Cairo some 3 or 4 years ago.

General FERINGA. If I may continue on that, sir, we have had no major disaster since 1927, but shortly after I took over my present job as president of the Commission, about 2 years ago last spring, we had a levee break in Senator Ellender's State above Baton Rouge on the other side of the river at a place called Free Nigger Point. There the levee went into the river and we were extremely blessed that we were able to stop that break.

Chairman MCKELLAR. Could you indicate the location on the map?

General FERINGA. Yes, sir. That break was about this location [indicating on map] upstream from Baton Rouge and across the river, and the water from that break started working all the way down here, of course, and into this general area until it would have been felt at Morgan City except that we were able to close it off by encircling it in about 3 days. I was up every hour for what must have been over 3 days.

IMPORTANT TO DEFENSE

To answer Senator Robertson's question, there is navigation on that river which is definitely of interest to the defense movement.

Chairman MCKELLAR. Heavy products such as steel?

General FERINGA. Yes, sir. I had a photograph taken [displaying enlarged photograph]. We will let the picture speak for itself.

In 1944, the peak wartime year, the traffic on the Mississippi River amounted to 34,708,000 tons of traffic.

Chairman MCKELLAR. That was by barges?

General FERINGA. Yes, sir.

In 1949 it carried 37,232,000 tons. If that traffic was ever stopped, I do not know how the United States would get along.

Here is a photograph. I was on the river looking at some revetment work and this tow came by. This is not a posed picture. I telephoned to the Natchez bridge, and we told them to get on the bridge and take a picture of it.

These [indicating] are all jeeps and these look like jeeps over here. Here is an Army truck. Here are jeeps. This is a covered barge. I do not know what is in it. I did not try to find out. Here is pipe going down for oil. These are covered barges. Here are automobiles. That is the type of traffic that makes use of the river.

Senator CORDON. Could you give us an estimate as to how many carloads that represents?

General FERINGA. This is a towboat bound downstream at Natchez bridge. I estimate that it is equivalent to four or five trainloads of 50 cars each. That is a guess, sir.

Senator STENNIS. The water tow is the cheapest transportation in the world?

General FERINGA. Yes, sir, possibly except the belt conveyors about which many are talking. I do not know accurately about the conveyors.

Senator CORDON. One reason for that is that the operator of a towboat does not have to pay anything for his right of way.

General FERINGA. Another reason, sir, is that they have one towboat which can take an awful lot of tons. Think of one towboat taking five trainloads of traffic.

Chairman MCKELLAR. To what extent is oil carried up the river?

OIL TRANSPORTATION

General FERINGA. There is a tremendous amount of oil carried up the river. If you will notice [showing enlarged photograph] this barge is an oil barge, it carries oil up the river, and it takes a deckload of jeeps, automobiles, and Army trucks down the river.

Here is another picture. I thought you would be interested in these pictures and I was very glad that Senator Robertson asked the question. Here is a picture of a tow going upstream. Here is some type of Army craft. Here is sulfur, here is an additional bargeload of sulfur, here is oil, here are chemical products coming up from the Gulf coast, from Texas. Here is a typical barge designed only for oil. That towboat is called the *Lin Smith* owned by the Charles C. Smith & Co., of Houston, Tex., under charter to Canal Barge Co., New Orleans, going upstream on the Mississippi River at Greenville bridge. This boat is powered by three 1,100-horsepower Cooper-Bessemers, supercharged Diesel engines, with three screw-type propellers, traveling at 4.5 miles an hour upstream. The river would be running 4 miles an hour up there. That towboat's length is 140 feet, its width 38 feet. The tow is composed of two end sections and two center sections, each 290 feet by 50 feet. Those barges are coupled together so tightly that the tow maneuvers as one unit. Senator Robertson is more familiar with that type of thing. The total length is 1,160 feet. This set of barges making up the unit tow has a combined capacity of 93,000 barrels of petroleum, the equivalent of more than nine trains of fifty 8,500-gallan tank cars. The approximate cost is $120,000 for each barge and $600,000 for the boat. The investment is over $1,000,000.

PROGRESS IN BARGE DESIGN

Now I am getting ahead of my story. There has been tremendous progress made in the barge industry. It used to be that a barge had a square bow and nobody gave a hoot whether it looked like a ship or operated like a ship, they just put pressure behind it; but now they are applying the same kind of shipbuilding technology and thinking and designing like in the olden days when the American clippers were the wonder ships of the world. We are way ahead of anybody else in the barges.

Chairman MCKELLAR. Do those go to the Great Lakes?

General FERINGA. No, sir, the waterway makes contact at Chicago but none of these barges go on the Lakes.

Chairman McKellar. Do they haul a greater amount of freight down the river and up the river than they do on the St. Lawrence River.

General Feringa. I do not know, sir. I will get that information.

(The information referred to is as follows:)

Waterborne traffic on the St. Lawrence averages about 10,000,000 tons per year and on the Great Lakes averages about 100,000,000 to 120,000,000 tons per year. The largest and newest cargo carrier on the Lakes has a capacity of 23,000 tons but the average carrier has a capacity of 10,000 to 15,000 tons. Comparative figures for waterborne commerce of the Lower Mississippi River are about 40,000,000 tons per year with tows averaging from 10,000 to 15,000 tons each. In 1904, the *Sprague* passed Memphis with a tow 880 feet long and 312 feet wide composed of 56 coal barges and 2 fuel barges, a total of 53,200 tons.

Chairman McKellar. I do not know. I would like to know.

General Feringa. This photograph of a barge shows what they are doing on the design. This is the front barge. Then there will be two square barges and then a tail barge just like the front one, only reversed. In actuality you have a tremendously long ship with a tractor unit which can take one tow, drop it at its destination and take on the next tow, and so forth.

Now this particular barge in this picture was developed for the Canal Barge Co. Incidentally, the man who designed that went to school with me, Harry Dyer, of the Nashville Bridge Co. of Nashville, Tenn.

This barge has a 90-foot rake, all the way from here to here [pointing], 90 feet, all shaped carefully. It has a 39-foot shear, because as these towboats get more powerful they push so hard that the barge has a tendency to dive, hence it needs a higher bow.

Senator Young. What is the cost for yearly maintenance on the Mississippi?

AMOUNT FOR MAINTENANCE

General Feringa. The entire amount for maintenance is $15,000,000. With respect to how much of that should go to navigation and how much for flood control, you cannot separate them, because flood control and navigation are completely intertwined. We get $15,000,000 a year for maintenance money.

Senator McClellan. Does that include bank stabilization?

General Feringa. That includes bank stabilization. It takes care of the tributaries and that takes care of everything.

Senator Stennis. That is from New Orleans to Cairo, Ill.?

General Feringa. All the way from Greenwood and Grenada to Pine Bluff and that whole area from East to West and from Cairo to the Gulf from North to South.

Senator Stennis. How far is it from New Orleans to Cairo?

General Feringa. About 1,000 miles.

Chairman McKellar. River miles?

General Feringa. River miles, yes, sir.

I have made some notes hoping to develop my story. I may repeat some of the things I have said.

I stated that the high flood of 1927 demonstrated to the Congress the need of this project, and the project, as you brought out, Senator Cordon, is now authorized in the amount of $1,292,748,500.

EXPENDITURES BY LOCAL GOVERNMENT

I would like to bring out that prior to 1879 the local people did much work, as has already been brought out, and that in 1927 they did not come to the United States empty-handed and say, "We have done nothing."

From 1714, when the first work was done by local people, to 1928, $292,000,000 was spent by local people, and those were prior to 1930

From 1928 to 1950, $46,500,000 was spent by local interests, that is, matching the Government funds.

The local interests must provide all the rights of way, they must maintain the levees after they are completed. They have set up levee boards. I hope that some of those levee boards will send representatives to appear before you.

Chairman McKellar. They are set up in every county, are they not?

General Feringa. Yes, sir, over several counties or various parishes, but every State has levee boards. Therefore the Federal Government does not have to pay for that heavy maintenance. If there is a breach, if there is a slide, then the Federal Government does it, but the normal maintenance of levee control, cutting grass, filling potholes, taking care of the highways, inspection, is all taken care of by the local interests.

So I would like to repeat that local interests have spent from 1714 to 1928, $292,000,000, and from 1928 to 1950, $46,500,000. Much of that original work is still incorporated in our project. Wherever we can we will build on the foundation of those original levees.

BALANCE OF APPROPRIATION AUTHORIZATION

We have stated that the authorization was $1,292,000,000. There has been appropriated to date $721,954,570, so the project is 56 percent complete.

Senator McClellan. Does that appropriation include what has been appropriated to date for maintenance over that period of years, or is that confined to construction?

General Feringa. Since 1941, Senator McClellan, when Congress told us not to include the maintenance, it is exclusive of maintenance. Prior to 1941, maintenance was included in that figure, sir.

Chairman McKellar. I shall insert in the record a table in the justifications giving details with respect to appropriations made to date from the $1,292,748,500 authorized by the Flood Control Act of 1928, as amended.

Appropriations made to date from the $1,292,748,500 authorized by the Flood Control Act of May 15, 1928, as amended by the acts of June 15, 1936, June 28, 1938, Aug. 18, 1941, Dec. 22, 1944, July 24, 1946, June 30, 1948, and May 17, 1950

	Total appropriation	Maintenance expenditures
May 29, 1928 (Second Deficiency Appropriation Act)	$14,000,000	(1)
Feb. 28, 1929 (War Department Appropriation Act, fiscal year 1930)	30,000,000	(1)
May 28, 1930 (War Department Appropriation Act, fiscal year 1931)	35,000,000	(1)
Dec. 20, 1930 (Emergency Construction Act)	3,000,000	(1)
Feb. 23, 1931 (War Department Appropriation Act, fiscal year 1932)	35,000,000	(1)
July 14, 1932 (War Department Appropriation Act, fiscal year 1933)	32,000,000	(1)
July 21, 1932 (Emergency Relief and Construction Act)	15,500,000	(1)
Mar. 4, 1933 (War Department Appropriation Act, fiscal year 1934)	19,653,424	(1)
NRA (Amounts allotted by PWA, fiscal year 1934)	44,000,000	(1)
Apr. 26, 1934 (War Department Appropriation Act, fiscal year 1935)	29,000,000	(1)
Apr. 9, 1935 (War Department Appropriation Act, fiscal year 1936)	15,000,000	(1)
May 15, 1936 (War Department Appropriation Act, fiscal year 1937)	15,000,000	(1)
May 28, 1937 (Second Deficiency Act)	1,000,000	(1)
July 19, 1937 (Emergency Relief Appropriation Act of 1937)	2,000,000	(1)
July 19, 1937 (Civil Appropriation Act, fiscal year 1938)	30,000,000	(1)
June 11, 1938 (Civil Appropriation Act, fiscal year 1939)	31,000,000	(1)
June 28, 1939 (Civil Appropriation Act, fiscal year 1940)	39,000,000	(1)
June 24, 1940 (Civil Appropriation Act, fiscal year 1941)	30,000,000	(1)
May 23, 1941 (Civil Appropriation Act, fiscal year 1942)	22,000,000	$6,646,854
Apr. 28, 1942 (Civil Appropriation Act, fiscal year 1943)	29,954,000	13,044,694
June 2, 1943 (Civil Appropriation Act, fiscal year 1944)	14,000,000	10,253,888
Dec. 23, 1943 (First Supplemental National Defense Act)	5,000,000	
June 26, 1944 (Civil Appropriation Act, fiscal year 1945)	26,000,000	9,782,780
Mar. 31, 1945 (Civil Appropriation Act, fiscal year 1946)	30,000,000	10,534,342
First Deficiency Appropriation Act, 1946	15,000,000	
May 2, 1946 (Civil Appropriation Act, fiscal year 1947)	46,000,000	14,311,685
July 31, 1947 (Civil Appropriation Act, fiscal year 1948)	50,000,000	13,507,653
June 25, 1948 (Civil Appropriation Act, fiscal year 1949)	61,000,000	17,080,676
Oct. 13, 1949 (Civil Appropriation Act, fiscal year 1950)	67,000,000	15,790,282
Sept. 6, 1950 (Appropriation Act, fiscal year 1951)	61,400,400	14,600,400
	847,507,824	125,553,254

[1] The Flood Control Act approved Aug. 18, 1941, contained in subpar. (g) under the title "Lower Mississippi River" the following proviso: "*Provided*, That funds hereafter expended for maintenance shall not be considered as reducing present remaining balances of authorizations."

Total authorizations	$1,292,748,500
Appropriations minus maintenance	721,954,570
Remaining to be appropriated after fiscal year 1951	570,793,930

FLOOD CONTROL PLAN

General FERINGA. Now, the plan for flood control can best be visualized if you can think of a tremendous funnel, the mouth of that funnel stretching from New York State on the east to Montana on the west and the water going down that funnel from New York State to Montana and part of Canada, all having to find its way to the Gulf through the comparatively narrow spout which is the Mississippi River itself. In order to determine what our problem was, because you cannot fight your enemy unless you know what the enemy has, we got in touch with the Weather Bureau experts late in the 1920's and together we determined that the greatest flood that we could logically expect—you cannot logically expect the Missouri and the Ohio to be in maximum flood at the same time, because the Missouri gets into the flood phase after the Ohio—from all these tributaries would amount to 3,000,000 cubic feet per second at the latitude of Angola, La. Now a cubic foot is 7½ gallons, so you have to take care of 22½ million gallons of water every second of the day. To take care of a flood of such magnitude, a possible flood, we have to use every means of flood protection that we can think of.

RESERVOIRS

We have reservoirs as one means. I am not only talking about the reservoirs in the alluvial valley but the reservoirs on the Ohio, the TVA, the Cumberland, the Missouri, the Arkansas, the White, the Red, and so forth.

Chairman McKellar. On the Tennessee and the Cumberland?

General Feringa. Definitely the Tennessee and the Cumberland, and those reservoirs have been effective. The reservoirs are designed to take off the crest of the floodwater; in other words, to hold back that crest and sort of meter that water out of those tributaries into the stream based upon the capacity of the stream to take it.

The 1950 high water I stated came out of the Ohio. The TVA reservoirs and equally important the Corps of Engineers reservoirs on the Cumberland were closed off when the water got so high at Cairo that we were afraid that that wall would be overtopped. We were in complete touch with the situation with the various engineers by telephone, and as you would expect from all Government agencies, there was complete cooperation.

Senator Ecton. Would not the reservoir system be the best means, the most economical and the most feasible in the long run to control this water?

General Feringa. You need all means, sir. There is so much distance between a headwater reservoir and the main stream. For instance, up around Fort Peck and coming down the river you need reservoirs for our project and also levees. You could never control this 3,000,000 cubic feet per second by reservoirs alone, sir, but certainly you do need the reservoirs.

Senator Ecton. I am thinking primarily of having reservoirs up in the canyon areas in Montana.

General Feringa. You would have all that area below this canyon area, sir, which is subject to heavy rainfall, which would not be controlled. Certainly reservoirs are an important aspect, and I mention them first.

RESERVOIRS COMPUTED

Within the alluvial valley we have five reservoirs. One of the pleasures I get out of working on this project is that so much is complete. We are getting somewhere. We have a lot of this work done, it works. The reservoir on the St. Francis, the Wappapello Reservoir, is complete and is working.

The project at Arkabutla in Mississippi, right close to Memphis, is complete, is working, and has worked fine.

Sardis right below there [indicating] is complete, is working, and it is fine.

Enid Reservoir, if we get the money in this bill, will be complete this fall. We will have it operating for the next flood season.

Senator Ellender. You say if we allow it. Did the House allow it?

General Feringa. If you allow what is in the budget, sir.

Senator Ellender. If we allow what the budget recommended, the $61 million?

General Feringa. Yes, sir.

Grenada right below there, the fifth one, we will have it completed 2 years from next fall.

So this is not a project on which we are making a new start. It is not a project we have just barely started. We are well on our way to success. Three of the reservoirs are complete now, the fourth will be complete this fall, and the fifth one will be complete 2 years next fall, provided we get the money.

Senator McCLELLAN. You are overlooking two in Arkansas.

General FERINGA. We have no reservoirs in the Arkansas, in the alluvial valley.

Senator McCLELLAN. There are two up there on the White River. One is complete and another one is in the course of completion. It is not within your jurisdiction, but they are contributing factors to flood control.

General FERINGA. Yes sir. Equally important to the reservoirs on the Ohio and the Missouri. Those reservoirs will contribute their part in the control of floods definitely.

Senator McCLELLAN. Then you have a number of them in Oklahoma that make their contribution.

General FERINGA. Yes, sir. The Arkansas is one of the important flood contributing tributaries of the Mississippi.

Chairman McKELLAR. I think I can tell you something that will astonish you. I have seen with my own eyes the Mississippi River 40 miles wide at Memphis, Tenn. Memphis is on the banks on the Tennessee side. On the Arkansas side it was formerly very low. It is still very low but it is protected.

Senator McCLELLAN. It went all the way to Crowley's Ridge.

Chairman McKELLAR. That is right. I went over there for the purpose of seeing that. I was a young lawyer and several of us went over there to see it.

Senator YOUNG. Do the big dams in the Missouri contribute to flood control or do they contribute more to navigation?

General FERINGA. They will contribute definitely to flood control. The whole project is designed so that we will need all the dams on all the tributaries that contribute their bit. If the Misssouri were in flood they would contribute a whole lot. They definitely would contribute to the flood control picture, yes, sir.

Senator YOUNG. Do they contribute more to navigation?

General FERINGA. I do not know, sir. It seems to me they would contribute a whole lot more to flood control than they would to navigation. But I leave that to the Missouri experts. To my mind the Missouri reservoirs will contribute a whole lot more to flood control than they will to navigation, Senator Young.

NEEDED CONSTRUCTION OF LEVEES

Now I mentioned the reservoirs as the first element of the flood control picture, and we need reservoirs, but we cannot control these floods, this tremendous amount of water, by reservoirs alone. The water that falls on 41 percent of the United States must find its way down this valley and we cannot control that 41 percent by reservoirs alone. So we need levees.

There is a general misconception by those who have not seen the Mississippi River Valley that the levee sits right on the bank of the Mississippi River. That of course is not so. The levees may be back

as far as 5 miles from the main river so that we will not encroach unduly on the flood plain of the river. So that the river, when it is low, has its normal scouring action and does not fill up. When the river gets high the large flood plain is a sort of automatic relief valve when it goes over the banks and is retained by the levees. The flood plain is leveed, not the river itself.

We have 1,599 miles of levees along the main stem from Cairo to New Orleans and back again, 1,599 miles; 1,215 of those miles are up to grade and section. I suppose it is about a thousand miles from here to Memphis, to give you an idea of how far that distance is. The levee part of that work is 73 percent complete. Again, we are getting somewhere, we are on our way. Sixty-two miles were done this fiscal year just ended, and with the figures in the bill before you, the budget figures, Senator Ellender, we would hope to do 35 more miles.

CONTRACTS AWARDED TO LOWEST BIDDERS

ChairmanMcKeller. To what extent are the contracts for building these levees let to the lowest bidder?

General Feringa. In each case, sir.

Chairman McKellar. In each case?

General Feringa. Yes, sir. We always award to the lowest bidder.

Chairman McKellar. There has never been any scandal about those contracts, so far as I know, because they are let to the lowest bidder uniformly.

General Feringa. That is correct, sir. We try to advertise our work in the spring by continuing contracts. We have some funds left over usually if there is no high water and we advertise our work. Then it must go to the lowest bidder. We make an estimate just as if we were going to bid ourselves. If the low bidder is not within 25 percent of our estimate, our estimate without profit, then we throw out those bids and we readvertise after we try to find out why there is a difference. Maybe we have made a mistake or they have made a mistake. Usually we have not made a mistake.

Chairman McKellar. I want to congratulate you on the way you have handled that business. I think that is the only proper way to do this kind of business.

General Feringa. The bidders know it and we have had no quarrel about it.

Senator Ecton. Do people live between the levee and the river?

General Feringa. Very seldom do they live there, but in the summertime you will see a tremendous amount of cattle grazing there. You may see some special fine patches of cotton run by a one-mule operator there because he can take a chance on it. Very seldom do people live riverward of the levees. There are one or two instances and usually they have their houses up on piles or mounds or something like that.

Senator Ecton. Is that land under private ownership?

General Feringa. Yes, sir.

In addition to the 1,599 miles of levees, we have 1,307 miles on the tributaries and 488 miles on the Atchafalaya.

Now that is the second means of flood protection. I have mentioned levees and now we come to the cut-offs.

CUT-OFFS

There are 16 cut-offs and they are complete. We are through with the cut-offs. They were made in order to shorten the path of the river to the sea, to speed up the velocity of the flow, to get rid of the water quicker, to make room for more water.

For instance, I figured out at Vicksburg, the fine city where I am stationed, that the high water in 1950 would have stood 56.1 on the gage instead of 45. The cut-offs brought down the high water at that location by about 11 feet.

The river, as you know, is a meandering stream and has many bends in it and the cut-off is simply a short cut across where the bend is the narrowest. Mr. Aldridge is pointing out some of those cut-offs.

Senator ELLENDER. That has the effect of speeding the water to the sea?

General FERINGA. Yes, sir. There are 16 cut-offs and they are all complete.

REVETMENTS

Now because the river has been shortened and, more importantly, because the river valley is so extremely rich, because the people are using every bit of the land, because there are so many people living in the valley, because there are industries, farms, and communities close to the levees, we can no longer afford to allow the river to meander and force its way downstream by pushing these bends downstream year in and year out and taking all the land with it. Therefore we have developed a revetment program. This revetment program is the most costly element of our work. It costs about $900,000 per running mile to revet the river. It, in effect, is paving along the banks of a stream.

Senator STENNIS. That is per mile of revetment, not per mile of the river?

General FERINGA. That is right, sir, $900,000 per running mile of revetment.

Chairman MCKELLAR. Percentagewise how many running miles of the river have revetments? It is a small percentage, is it not?

General FERINGA. The river roughly from Cairo to the Gulf is about a thousand miles. We expect, when our revetment program is completed, to have to revet about 450 miles—and, Mr. Chairman, I am talking away from my notes and I would like to correct those figures, but they are accurate within a couple of miles—about one-half of that program, 225 miles, is complete.

We place revetments where the river is attacking and where there is something back of it where we cannot allow the bend to go back. There may be a community or there may be a levee which is too costly to set back. The first thing we do is get a bank-grading machine and we shape the bank [indicating on diagram] even under the water to about the shape we want it so that there is no irregularity, no stumps sticking out, a nice shape just like building a road. On the upper bank we place asphalt revetment. That is done by trucks dumping asphalt and building it like a black top road. That is cheaper than articulated concrete, but you can only place it where it is above the water elevation, and the Mississippi River is never cooperative. It is always high

when you want it low and it is always low when you want it high; it is never just right.

Then we place articulated concrete mats. These are slabs which are built by contract. We call them squares. First of all, we get a wire reinforcing [indicating], steel or copper weld wire reinforcing. That is placed down on a platform. On top of that concrete is poured. That then is stacked and piled and allowed to cure. Finally when those squares are brought from the field and placed on the mat barges they are interconnected so that you have in effect one strip of concrete mat here, one strip here, and one strip here [indicating], and it goes on indefinitely until you have a roll of that mat on the barge. That is fastened by anchors and cables and the barge then works out into the stream, a whole lot like unrolling one of these old-time roll-top desks. You will see this whole bottom covered by a reinforced concrete slab which is articulated so that it can adjust itself to the bottom and it goes out for five or six or seven hundred feet, depending on the river.

Chairman McKellar. What is the life of a revetment?

General Feringa. We design that revetment, sir, roughly for 20 years. I have seen revetments in place much older than 20 years. As I mentioned before, Mr. Chairman, if we can place enough to tie it down from flank to flank, hard point to hard point, it usually stays in place. Due to—and this is not a plea for funds—the fact that we can only do so much with the funds we have, the revetments do fail by flanking. As you go down the river you will always see a revetment, with a scallop on one side and a scallop on the other side. That is due to the fact that the river attacked it. Again, to repeat myself, you take military tactics, if you cannot secure your flanks then your force is open to attack. The river is just exactly the same way.

Senator McClellan. Where you have completed it and secured your flanks is there any great difficulty in holding it then?

General Feringa. No, sir. It holds. I have seen pieces right around Carruthersville, Mo., that have been in place for Lord knows how long. Right around Helena there has been a revetment in place for a long while, and as far as I know it will stay forever. You see, after it once holds the river and you get the curve the way you want it, then the river flows along in a nice even tenor on its way. In high water it goes over the flood plain, but there is no attack, it flows smoothly.

Senator Cordon. That is $18,000,000 a year for replacing?

General Feringa. When you get it all complete, but when you get it complete I think it will hold up longer than 20 years. You see, we lose by the flanking.

Senator McClellan. Just like building a roadbed and before you get it completed and nailed down the flood comes and washes part of it away. When you get it completed there is a certainty of its holding.

General Feringa. Yes, sir. If you build a macadam road and you cannot seal it off where the water can get at it, you will lose it with the first frost. If you get it sealed off it will last a long, long while.

FLOODWAYS

I have mentioned some of the elements of protection, the reservoirs, the levees, the cut-offs and the revetments. I would like now to men-

tion the last and very important element and that is the floodways. I mentioned the tremendous amount of water that we have to contend with, 3 million cubic-feet per second, and it is nearly impossible to visualize it. It helps you a little bit to multiply it by 7½ gallons for each cubic foot per second. There you have 22,500,000 gallons per second, and you have some idea of the amount of water. If you go back to the figure I gave you that the water that falls on 41 percent of the United States plus part of Canada must go down the Mississippi River, in order to do so safely, we need all these means and finally we must take additional means to get it in the Gulf.

I am going to skip over the New Madrid floodway because it is complete. It was operated just once and I hope it will not have to be used again. I would like to move down to Louisiana on the map and explain the project at that point. We have 3 million cubic feet per second that we have to contend with.

Senator CORDON. You mean that is the maximum with which you might have to contend?

General FERINGA. That is our project flood, that is the logical amount we have to contend with.

Senator CORDON. What do you mean by logical amount?

General FERINGA. The maximum amount we can reasonably expect the tributaries to contribute at the same time.

Senator CORDON. That is not the maximum, but you can logically expect the major part of the time it will be that?

General FERINGA. Yes, sir, that is exactly it. We have 3 million cubic feet per second to contend with here [pointing]. We know that at New Orleans, although the river is at one place 222 feet deep, and I suppose about a mile wide, that it can only by actual measurement when the levees are at 20 feet carry 1,250,000 cubic feet per second. So we have to take care of that other 1,750,000 cubic feet per second by other means. We have done that by taking 250,000 cubic feet per second through Bonnet Carre. Bonnet Carre is complete. We do maintenance work, but the structure is complete.

Senator CORDON. That has been used on two occasions?

LAKE PONCHARTRAIN, BONNET CARRE, LA.

General FERINGA. Three. The last time in 1950 when the junior Senator from Louisiana helped pull out one of the needles and operated one of the machines. He showed a great deal of ability. We tried to operate it the minimum time. Actually, it operated in such a way, and I would like the two Senators from Louisiana to bear me out, that the people felt they were benefited by it, that the oyster industry and the fishery industry said it helped them instead of hurting them. That was because Colonel Holle, the district engineer at New Orleans, had his finger on the pulse and operated it correctly and closed it at the first minute.

Chairman MCKELLAR. What is the distance there?

General FERINGA. That is about 5 miles lengthwise, and less than 2 miles across there. That is a structure across there [indicating]. A concrete structure which has placed on it in a sloping line, a large number of wooden needles. Water comes against them. When you open that, you open with a machine, pull up a needle and another

needle and you finally let this river discharge to the full capacity of the floodway of 250,000 cubic feet in Ponchartrain.

Senator LONG. How do you get the water from the river into Ponchartrain? You build levees on both sides, you build a spillway at the Mississippi River and you build levees from the spillway to Ponchartrain and you build a bridge to the two levees so it can get across, so the water goes through.

General FERINGA. I have come to the point where we take 1,250,000 cubic feet per second down by New Orleans, all we can take. We take 250,000 cubic feet through the Bonnet Carre. The balance of that, one-half of that, 1,500,000 cubic feet per second, must go down this Atchafalaya Valley to the Gulf of Mexico, another short-cut. It is roughly 100 miles down this way. It is roughly 300 miles down this way, from old River to the Gulf by Mississippi and only 100 miles by the Atchafalaya.

Senator ELLENDER. General, will you describe the length of this spillway and the distance between the two levees and the spillway you are now building at Morganza?

ATCHAFALAYA RIVER

General FERINGA. Yes, sir. We have then 1,500,000 cubic feet per second that we cannot take down the main river; that we have to take down the Atchafalaya Basin. The Atchafalaya River itself has been improved so it will take 650,000 cubic feet per second. We are building now at Morganza, and I will come to that again in further detail, a control structure across the Morganza floodway which will take another 600,000 cubic feet down this floodway. As a final result, 250,000 cubic feet will go down the West Atchafalaya floodway and it will find its way into the Gulf past Morgan City, near Houma, and through Wax Lake outlet, 270,000 cubic feet. I would like to come back to Atchafalaya in further detail.

MORGANZA FLOODWAY, LOUISIANA

I have a picture which shows a little bit what one of these floodways means. Of course when you take an aerial photograph like that it is sort of distorted, but this is an actual picture. I am sorry that the river was not in flood when the picture was taken. The river was just about like it is now. Here is a sand bar out here and any time you see a sand bar you usually see the caving on the other side. You see the levees are away back from the river itself, not like many people think, on the bank of the river. Here is the Mississippi River bank. We plan to take 600,000 cubic feet via the Morganza floodway right through here into the Atchalafaya Basin and all the way into the Gulf of Mexico. We are building now the Morganza control structure because if you ever opened up that river in time of flood with all the water and all the pressure behind it, you could not close it until the river went down. The river might not go down for 3, 4, 5, 6, or 7 months. Therefore you must control the flow, else you will hurt these people. So we need a control structure.

Part of that control structure is finished. The embankment section is nearly finished. This structure is under construction and based on the funds before you we will have that in operation a year from next December.

HOUSE ACTION ON BUDGET ESTIMATE

Senator ROBERTSON. I do not like to interrupt your interesting discussion of this over-all picture, but I have only 5 minutes. I want to get down to one specific proposition. The House cut the budget estimate to $57,000,000. It allowed a total of $97,860,500 for new construction work. Of that amount, $53,000,000, or more than one-half, was in the States of Oregon and Washington. As Shakespeare says, comparisons are odious, and I do not want to make any odious comparisons, but as a matter of information you are discussing the urgent necessity of additional funds in this Mississippi Basin which is your immediate responsibility. Now we need some information as to whether that is more urgent than $36,000,000 in Oregon and $17,000,000 in Washington, or are you asking us to O. K. the $53,000,000 for those States and add $57,000,000 more?

General FERINGA. I am appearing, sir, only as a witness for the Mississippi Valley project. The Chief of Engineers, I think has appeared and will appear for the entire appropriation. I am supporting the need for restoring the $2,000,000 for the Mississippi River project which was cut out by the House.

Chairman MCKELLAR. You have not examined the other two rivers in the west?

General FERINGA. I have in former years, but it is not my job anymore. I used to be Assistant Chief of Engineers for Civil Works. I am now President of the Mississippi River Commission.

Senator STENNIS. May I ask a question to get our figures straight? The Bureau of the Budget recommended $61,000,000 for this project about which you are testifying?

General FERINGA. That is correct, sir.

Senator STENNIS. And the House allowed $59,000,000?

General FERINGA. That is correct, sir.

Senator STENNIS. What you are asking for here is in addition to the $59,000,000?

General FERINGA. I am requesting that the $2,000,000 be restored, sir, because we need it, to carry on our work.

Senator ELLENDER. That is to continue work already in progress?

General FERINGA. That is right, sir.

RESTORATION REQUESTED

Senator STENNIS. You are asking for $2,000,000 additional to what the House put in the bill?

General FERINGA. That is right, sir.

Senator ROBERTSON. That is what I was trying to find out.

Senator STENNIS. I believe we are ready to vote on it right now.

Senator ROBERTSON. As King Agrippa said to St. Paul, "Almost thou persuadest me to be a Christian."

Chairman MCKELLAR. Did the House cut interfere with the Morganza structure?

General FERINGA. It will, to a comparatively slight extent; yes, sir. In order to answer the question fully, and I would like to do that, sir, I would like to go back to my original estimate which is before you. I made up the money we needed, we actually needed to carry the project forward with the greatest engineering efficiency, and came

to a figure of $122,696,000. That is the money, in my estimation as an engineer, that we could use to good advantage for work actually needed on this project so we will get it done faster, so for example we will not have this flanking of the revetment work, I have described before.

ORIGINAL BUDGET CUTS

The Bureau of the Budget cut that originally to a figure of $74,500,000 plus $500,000 emergency funds. That was before Korea. As soon as Korea happened, the budget started to cut down the $74,500,000. I admire the administration and the budget for doing it. It seems to me they did the right thing, due to serious international conditions—but by doing it they whittled down every element they could. We appeared before them. Every place where they felt they could cut one dollar they took it off—every place where we could, we were slowed down until finally they allowed us to go before the House not with $74,500,000 they set up at first, but the $61,000,000 to which they had whittled down progressively, as conditions became more and more serious.

I know that you gentlemen remember that President Truman made a talk one evening and said he was going to cut every element of his budget for civilian need that he could. The next morning we got a telegram to cut the then budget figure of $65 million to $61 million. The budget did not take an arbitrary cut—I give them credit—they looked at each element and said, "Here is a contract, slow that down," "Here is a contract, maybe he will not earn so much," until finally the estimate that we went before the House with was $61,000,000. I submit that our funds already had suffered a cut of $13,500,000.

Therefore when the House cut the $61,000,000 by another $2,000,000 you might say, "Well, what is $2,000,000?" To my mind it is so many nickels, it is so many quarters that must be squeezed from a project like this or any other project.

Chairman McKellar. I notice on certain other projects they are not cut. Can you explain that?

General Feringa. The House merely stated, if I can find a copy of the report, that they felt the $2,000,000 which had been cut from Mississippi River and Tributaries project should be applied to slowing down the work. In apportioning that $2,000,000 they did not tell us how to apply it and I think as always the House Committee was wise in doing that. As I understand their instructions, I am going to have to try to squeeze it from every place I can in order that it will hurt the least.

HOUSE REPORT CITED

Chairman McKellar. I read from the House report:

The committee recommends $59,000,000 for this item, a reduction of $2,000,000 in the budget estimate and a decrease of $2,400,000 in the amount appropriated for the current fiscal year. The committee believes that the tempo of the works on the lower Mississippi can be slowed in the minor degree indicated by the reduction in the interest of making every provision for more vital national defense needs. The revetment portion of this project calls for the use of critical and scarce materials, including steel and concrete. These scarcities will undoubtedly have some effect on the entire program as contemplated by the Corps of Engineers for the fiscal year 1952.

I do not want to comment on that if that is what the House said. It gives you discretion as to where you can place these funds.

General FERINGA. That is right, sir.

Chairman MCKELLAR. How does the 10 percent cut on personal services affect you?

General FERINGA. There is no 10 percent cut, sir. It is the Taber-Jensen amendment.

Chairman MCKELLAR. This is construction.

TABER-JENSEN AMENDMENT

General FERINGA. We have the Taber-Jensen amendment which was put on this bill. I know and respect Mr. Jensen and I know and respect Mr. John Taber, and I have no doubt they had reason to do what they did, but I can only talk on how the Jensen amendment will affect my work.

I have made some notes. Our personnel in time of war turns over rapidly. We have in our work in Vicksburg something like 125 Reserve officers who have gone out to Korea, Germany, training, etc. One of my assistants is Chief of Staff of the Thirty-first Infantry Division. Those men go out and they should go out, but if you cannot replace them temporarily that makes a hardship. We are not doing any military construction right now, and if our engineers are needed somewhere else in the country we let them go, encourage them to go, because where there is need for engineers that is where they should go; but when it comes to replacing them temporarily if this amendment goes through we cannot replace them. We have some old-timers and unfortunately they are retiring and some are even dying. When they go, according to this Jensen amendment, we cannot replace them.

More importantly, I think, we do our work when the river is low. We place our revetments, we must do our dredging when the river is low. We have much revetment equipment, boats, etc., but on lay-up status we do not keep the crew; we let them go to get other jobs.

Chairman MCKELLAR. You do not employ them by the year and pay them a salary?

General FERINGA. No, sir. We employ them while they work. If this Jensen-Taber amendment sticks, if we ever let them go we can only take one-fourth of them back, and you cannot operate that way, sir.

Our dredges are costly pieces of plant. They are big boats, they are big ships. In order to operate a plant like that economically, you have to operate that plant at least 6 or 7 days a week and 24 hours a day.

Senator ROBERTSON. General, if I may interrupt, we would not accept the Taber-Jensen formula. We adopted in lieu thereof a formula to cut personnel 10 percent, but not construction personnel. So I am not sure at all that our formula, if all of your work is construction work, would affect you at all.

Chairman MCKELLAR. I doubt if it would.

General FERINGA. If I may go on with these figures and answer Senator Robertson's question on that, I still would like to address myself just a minute to the Jensen-Taber amendment because I think

it is before your committee, sir. If we have to reduce our inspection personnel, and if from reason of lack of inspection one of our dams is less than perfect, one of our levees is less than perfect, the damage will come many years from now and I do not know where the responsibility lies.

PER DIEM PAY OF CONSULTANTS

Senator ROBERTSON. We cut the Interior experts on inspection from $75 to $50 a day.

General FERINGA. I am talking about our regular inspection, Senator Robertson.

Senator ROBERTSON. The Army engineers pay experts $100 a day.

General FERINGA. We pay consultants from $35 a day up to $100 a day, and that is only for expert consultants, sir.

Senator ROBERTSON. Would there be any objection to reducing it to $75.

Senator ECTON. My recollection is that we left it at $100.

Senator ROBERTSON. You made a motion to cut it to $50.

Senator MCCLELLAN. You made a motion to cut it to $50 and we compromised on $75.

Chairman MCKELLAR. I am informed by the clerk that we agreed on $100 and so reported to the Senate.

Senator ROBERTSON. Would it be all right to make the Army engineers pay $75 for experts?

General FERINGA. No, sir, I would say not, if you are asking me the direct question, sir. You only employ a consultant when you need the best specialist you can possibly get. I would not employ a consultant unless I needed one, but when I do need one I want the best one. If I had to have a serious operation for a member of my family I would want to go to the best surgeon. I would not go to a smaller man, because he costs less money. When we get consultants we get most of them at the lower figures and comparatively few at $100; but if you limit it to $100, you are going to lose the best technical skill when you need it the most.

PERSONNEL CUT

We have talked a little bit about this 19-percent cut. Our appropriation for fiscal year 1950 was $67,000,000. Our appropriation for last year was $61,400,400. The bill before you has $61,000,000. Our average annual employment for the three districts of New Orleans, Vicksburg, and Memphis and my own office in 1948 was 7,510; in 1949, 7,106; in 1950, 5,971. As of June 1951, before we started our work, it was 5,213. Last year our peak came in August, when we employed 6,705. Our low came in April 1951, 4,592.

I repeat that our work is dependent upon the stage of the river. We work best when the water is low. As to my own office, which does not actually get into construction but does the supervising, does the designing, does the planning; when I took over, when we had a bigger appropriation, we had 253. We are now down to something like 205.

Now I speak in all deference, sir, I do what I am told, but you have asked me. I believe that any cut, any arbitrary cut, in personnel hurts the offices which are prudent, which have been watching their employ-

ment, and encourages those that are profligate. You can inspect the figures to see that. It does not hurt those people who do not give a hoot how many they employ. I know that a blanket cut over my work will hurt the work.

Senator ROBERTSON. That may be very true, but you must recognize the fact that we look at the over-all figures and they have not gone down like yours have gone down. They have gone up very rapidly. We do not know how to get at these individual bureau operations like those. You evidently have done a fine job, you are down 1,500 employees from your peak of 1948.

General FERINGA. Yes, sir.

Senator ROBERTSON. Where are we going to find another operation that has gone down like that? Nearly all of them have gone up. We do not know how to get at them so we take the meat ax and chop.

General FERINGA. I can only speak for my own job and say that every word I say is true. I hope if you have any legislation to arbitrarily cut personnel that you will exempt the M. R. & T. project, sir.

Senator STENNIS. When you say M. R. & T. what do you mean?

General FERINGA. Mississippi River and tributaries project.

MORGANZA CONTROL STRUCTURE

Now I would like to get back to the Morganza. Here is another picture of the Morganza floodway. I would like to respectfully emphasize and re-emphasize to every member of this committee that there is not one iota of new work in any of this project. It is all one project. There is not one iota of new work. We are not beginning any new element. This Morganza floodway is going to cost roughly $20,000,000. That was our estimate three years ago and that is our estimate to date.

Chairman MCKELLAR. How many miles is that?

General FERINGA. That is roughly 5 miles wide, and 4 of those 5 miles are earth embankment and 4,000 feet is the actual control structure.

Senator CAIN. May I ask one question? If your estimate was $20,000,000 3 years ago, how can it possibly be $20,000,000 today?

General FERINGA. Because I expected that the dollar was going down in purchasing value and I have appeared before committees of Congress in both Houses many times and I will never be guilty of giving an estimate which is too low and I will cheerfully be guilty of giving estimates that are too high.

Senator CAIN. That is to say 3 years ago you were able to estimate your cost needs 3 years hence?

General FERINGA. We estimated a cost and I put a big factor on that because I looked at the engineer cost index which was rising. I know and respect the committee of the House and I know and respect this committee, and I did not want ever to come before any committee of Congress and have them say, "General, you told us last year it was $20,000,000. How come it is $22,000,000 or $23,000,000?"

Senator CAIN. I think that is a rather remarkable thing.

General FERINGA. I think that is generally true of everything the Corps of Engineers does. I admit it is a good outfit.

Senator YOUNG. The cost of earth removal has certainly not gone up per cubic yard?

General FERINGA. It has gone up, but not as much as other items. Everything has gone up. Earth moving has not gone up as much because of the tremendous improvement in the means of earth moving, that is correct, sir.

Senator YOUNG. Is it not correct that the cost of moving earth per cubic yard is as low as it was 5 years ago?

General FERINGA. It has gone up, sir, in my area, sir.

Senator CAIN. Would it not be possible, General, to let your estimators be of service to every other branch of the Federal Government? I think it would make our work here much easier.

General FERINGA. I am proud of the estimates of the Corps of Engineers.

Senator CAIN. You are deserving of that compliment, sir.

Senator LONG. Have you also had a lot of good luck on that project?

General FERINGA. We have had extremely good fortune.

CONTINUING CONTRACTS

Now I should like to talk for a minute about continuing contracts. In order to get good bids you have to advertise work when contractors are idle, when contractors are available, when contractors have time to look over the job and send their engineers and their estimators around. We would like to advertise our work in January and February because at that time in many parts of the United States the contractors are not at work. In our valley, that is the upper part, they cannot work because the river is up. They have to keep their estimators available, they have to keep their engineers available, they will have time to study our specifications.

After we advertise it, we encourage and always have bid opening conferences on big jobs. Long before the bids are opened our district engineers sit down around the table with the prospective bidders, take off their coats and make it informal. One may say, "I do not understand so and so," and they explain it. Someone says, "Why don't you do so and so, because we have this type of machine?" "That is a good idea." We make a change. Finally our bids are opened in March or April. When the contractors are idle, we get 2 or 3 or 5 or 17 or 18 bids. Consequently we get low bids, frequently close to our Government estimate that we make, without profit.

You might ask, how can you do it because you do not get your money until July 1? We do it by using continuing contracts. In our own work I earmark a certain percentage from revetments, a certain percentage from levees for an emergency. I allot it to our district engineers but I say, "You cannot use it until about March because the river may be dangerous." It may amount to about $2½ million. It is not held back; it is not a reserve; it is just earmarked, not to use, until high water danger is over. We can use a small amount of that money at times to start a continuing contract on a shoestring when the contractors want it, because we have been before the Bureau of the Budget and usually before the House committee, and have some idea about how much money we are going to get to service those contracts.

Practically all of the work I am talking about right now for this appropriation is under way. The biggest element, the most important

single element unfinished is this $20,000,000 Morganza job. If you had to make $20,000,000 available for a period of 3 years, you could not get along with the rest of the work, but on a continuing-contract basis you obligate only what you will spend in 1 year.

EFFECT OF CUT

As I said, the budget cut us progressively, and again I say that I admire them because I think they were right, due to the critical Korean situation. They cut us progressively from $74,500,000 to $65,000,000 to finally $61,000,000. Now we get another $2,000,000 cut on top of that. We have to squeeze some of these continuing contracts and tell the contractor. "Slow down, because we may not have enough dollars to pay for it." That is not economy.

Senator LONG. That results in the project costing more when you have to do that?

General FERINGA. Without question. We have to keep our engineering inspection there, the contractor has to demobilize and mobilize again. The river may go up and grab some of this work and take it away. I do not know when a project flood is coming. I was fearful it would come in 1950 but it did not quite make it. It was a matter of 60,000 cubic feet that hung in the balance whether or not we would have to turn the river through the Morganza floodway, and we would have had to do it regardless of what would happen.

Senator YOUNG. I think you are fortunate in being able to keep on the older men for planning. In the Missouri Basin they have had so many changes I do not see how they can do any planning. The engineers in charge of Garrison Dam have been changed at least four times and the dam is not finished. It is only half finished.

Senator LONG. Not the last flood but the flood previous to that, when all that area shown in the picture that is shaded was flooded, those people were screaming for some sort of aid. They were screaming to open up the Morganza structure.

General FERINGA. That is right. The people had cattle standing on small pieces of levee. All their places were wet and this area [indicating] was under water.

Senator LONG. The National Guard went in and put tents on the levees and the people simply got out of that country and moved on the levee at that time. They lost much of their crops and there was a lot of damage around there because this structure was not ready. It was very difficult for me and my colleague at that time to explain that those people had to lose their crops and investment because of the tremendous damage that would occur around Morgan City if that structure were opened. It is very hard to explain to one man that his house will have to be under water so that another man's house will not have to go under water.

General FERINGA. That is right, sir.

Senator ELLENDER. Are you going to continue with the Morganza?

General FERINGA. I can go back to the Morganza afterward.

Senator ELLENDER. I want to ask you about the guide levees in the lower reaches of this river.

General FERINGA. If you can hold that question, I would like very much to go ahead with this, if I may, sir.

Senator ELLENDER. All right, proceed.

General FERINGA. Our work is successful, Mr. Chairman, but the 1950 high water, as Senator Long and Senator Ellender brought out, proved that it is incomplete. In 1950 we passed 2,060,000 cubic feet per second at latitude Old River. That is pretty close to that project flood. At the levee at Birds Point-New Madrid it was a matter of inches whether those levees were overtopped or not, 5 or 6 inches. I was up there. Bonnet Carre was opened for 37 days. We nearly had to use the Morganza floodway, ready or not, 360,000 acres in that Red River backwater area were completely inundated.

IMPORTANT IN DEFENSE

I believe this project is important in war and it is important in peace. I am in the Army, I have been in both World Wars. I realize, I think as much as anyone else, the importance of saving every dollar to get ready for national defense. I also realize, and I live in the Mississippi Valley, that the United States cannot be prosperous, that the United States cannot continue to do its part and more than its part unless it has a prosperous Mississippi Valley. The Mississippi Valley is the key valley in the whole United States because it is the largest valley and any time that valley gets to be a debit instead of a credit, talking about money, the United States is going to have an awfully hard row.

Now in World War II, our work was continued in the valley. I was overseas and at Camp Claiborne and all that, but the Mississippi tributary work under Gen. Max Tyler was continued. This is the one flood project that was not stopped. Congress said, "You may stop everything else but do not stop this." I think that is equally true and more so today. I think there are two basic reasons for that, our production, both agricultural and industrial, and navigation.

MISSISSIPPI RIVER TONNAGE

During the peak wartime year of 1944, and I am repeating myself, from Minneapolis to the Gulf we carried barge traffic amounting to 34,708,200 tons. In 1949 we carried 37,232,000 tons. I do not have the figures for 1950, yet, but it is indicated to be around 40,000,000 tons. I do not see how the country could exist if we had to stop that traffic.

Agriculturally there are 20,000,000 acres in this alluvial valley. Industrially, there are 3,500,000 people living in this valley.

NO NEW STARTS

I would like to repeat that there are absolutely no new starts.

FUNDS OBLIGATED

When I appeared before the House committee I was questioned about unobligated funds, and again I want to repeat that I respect that committee, it is a fine committee. I think it was in April when I appeared before that committee and I told them that I expected the unobligated balance at the end of this fiscal year would be $490,000. It actually turned out on June 30 to be $433,626.88, out of the whole

thing, which means we have scraped the bottom, we have no more money, we are dependent entirely on the money in this bill before you.

Senator CAIN. Has that been your policy in years gone by to live pretty much on a current basis?

General FERINGA. Yes, sir. Last year I told the House that we would end up with less than before. I have forgotten the amount. This year we ended up with less than we had before, last year. The figure for last year was $647,461. In other words, we work from year to year.

I feel that the dollars which Congress gives us should be used. Any time you let those dollars lie idle in the bank you do not get the money's worth. Any time you let a piece of machinery stay idle, you do not get your money's worth.

Senator CAIN. You seldom end up with a heavy cash surplus?

General FERINGA. We never end up with a cash surplus. We will have some unexpended funds to service these contracts, but our money is never high.

Senator STENNIS. Could I ask two or three questions as a matter of summary? Now in all this testimony you have given here in all this area there are no new projects included in this $61,000,000?

General FERINGA. You are completely right, sir.

Senator STENNIS. No new projects?

General FERINGA. No new projects at all.

Senator STENNIS. You have already reduced your employment, according to the figures you gave us here for the last two or three consecutive years, you have reduced your employment ranging about 15 or 20 percent?

PRIOR YEAR APPROPRIATIONS

General FERINGA. I would like to give you the figures for the three districts and the commission, sir. The average annual employment in 1948 was 7,510; in 1949 it was 7,106; in 1950 it was 5,971. As of June 1951, and we are not in our major working season, so this will increase, we are at 5,213. I think our average for 1951 will be about what it was for 1950. You might ask why. The reason therefor, as I said, is that our appropriation in 1950 was $67,000,000, last year it was $61,400,400. I am hoping it will be $61,000,000 this year. Obviously we are not going to employ as many people with a less appropriation. Always we do all the work we possibly can by contract.

Senator STENNIS. During the last several years you have already sustained considerable reduction in your appropriation?

General FERINGA. That is right.

Senator STENNIS. It is down to what you consider the minimum, $61,000,000?

General FERINGA. In my office I had 253 when I took over. I am down to 205.

Chairman MCKELLAR. The budget estimate was $65,000,000.

General FERINGA. This year, sir, it was $61,000,000, but they brought it down from $75,000,000 progressively. They started with $74,500,000.

Senator STENNIS. By way of summary, you are staying within your estimate and therefore getting the planned results out of this money?

General FERINGA. That is right, sir.

Senator STENNIS. You are not just going part of the way but you are getting the original planned result out of this money that you have been getting?

General FERINGA. That is right, sir.

Senator STENNIS. You are only asking, then, for $2,000,000 increase over the House figure?

General FERINGA. Yes, sir.

Senator STENNIS. Which would put it back up to the budget figure?

General FERINGA. Yes, sir.

Senator MCCLELLAN. Have you finished with your general discussion?

General FERINGA. I think so, sir. I have jumped back and forth so much in answering questions, but I think I have covered everything I hoped to cover. Senator Ellender wanted to talk about the Atchafalaya. If that is so, I want to put up another map.

ATCHAFALAYA FLOODWAY LEVEES, LOUISIANA

Senator ELLENDER. With this map before us I believe I can obtain the information. What portion of the guide levees beginning around Angola down to the Gulf are not completed?

General FERINGA. 448 miles of levees are required on the Atchafalaya, both sides; 367 miles are complete. There are 46 miles 1 to 2½ feet below grade. There are 18 miles that have only the first lift. As you know, in the lower part of that basin you have to put them up one lift at a time so the ground consolidates. You let it lie for 2 or 3 years and then you put on your second lift. Five miles need general shaping. We pump in the material and let it lie and consolidate and then go in to shape the levee. Twelve miles remain to be started.

Senator ELLENDER. If the Senate should appropriate the $61,000,000, do you contemplate completion of the levees to which you have just referred?

General FERINGA. As much as we can, sir.

Senator ELLENDER. How much will be left over?

General FERINGA. That is why I have this map before me. We plan to use that money to raise 5.7 miles of low spots between Viva and Lottie on the east levee and Hamburg to Courtableau on the west levee.

We plan to do work on the trestle section of the N. O. T. and M. bridge at Krotz Springs.

We plan to do some work at the channel and bridge piers on the bridge at Melville. That is extremely important.

We plan to do some work between Bayou Sorrell lock and Bayou Pidgeon.

We plan to do some work, raise to grade about 9.5 miles between Ramah and Morgan City. That is a long distance in that general area.

WORKS BELOW MORGAN CITY, LA.

We plan to put in about 1 mile of levee and flood wall between Morgan City and Bayou Boeuf lock.

We plan to put in 1 mile of new levee below Morgan City, getting into the other side of the Bayou Boeuf lock.

Senator ELLENDER. You mean it is a continuation of the levee?

General FERINGA. Continuation of the guide line levees; yes, sir. It is not a new levee. It is a continuation of the levee already started. Thank you for the correction, sir.

We hope to start the Bayou Boeuf lock.

Senator ELLENDER. Have the contracts been let on it?

General FERINGA. No, sir.

Senator ELLENDER. When do you expect to let them?

General FERINGA. I am going to try to wait until I find out what is going to happen on this appropriation bill.

Senator ELLENDER. In order to complete that, to start the building of this lock, it would then be necessary for this appropriation to be made according to the budget estimate?

General FERINGA. I read the Congressional Record about this time very carefully, sir, because I have to find out what is coming in order that I may make my plans; yes, sir.

May I go ahead and give you the final description of the whole thing?

Senator ELLENDER. All right.

General FERINGA. We hope to raise 1.8 miles of levee south of Berwick. We will raise about 0.6 mile near Wax Lake. We plan to work on the Maryland pumping station. That is west of Calumet floodgate.

I may have missed one or two items, but that gives it to you roughly. In other words, we plan obviously to do that work which is most important from year to year. Those are the elements which are most important at this time and they are dependent upon the funds we are going to get therefor.

Senator ELLENDER. Should we appropriate the money you are now requesting—when, in your opinion, will the guide lines that you have been talking about and the lock at Boeuf be completed?

General FERINGA. I had hoped it would be completed in 1953, but with the cut last year I doubt if it will be completed before 1954 or later. You see, sir, I make my estimate from the engineering standpoint of completion, and again I speak in deference, but we must proceed according to funds available therefor.

Senator ELLENDER. Until those levees and locks are completed it would be dangerous to residents in that locality if the floodway at Morganza were opened?

General FERINGA. That is correct, sir.

Senator ELLENDER. In order to relieve the people living around Ferriday and in central Louisiana?

General FERINGA. If it was opened to its full capacity, that is correct, sir.

Senator ECTON. General, do I understand that when you get these projects completed that you have just enumerated, then the main expense will be primarily maintenance from there on?

General FERINGA. For the last few minutes I have been speaking only of the Atchafalaya Basin. At the beginning of my testimony I stated that the entire project as authorized cost $1,292,748,500. To date there has been appropriated $721,954,570. So we are 56 percent complete. Now the Atchafalaya, which is one element, should be complete in the next 3 or 4 years. As another example three of the

dams are completed. One of them will be completed next fall. The entire project will not be complete until the whole project up and down the valley is complete, sir.

ST. FRANCIS BASIN PROJECT, LOUISIANA

Senator McCLELLAN. I would like to ask the General about three or four projects here. Let us first take the St. Francis Basin. You have only $500,000 in this bill for the St. Francis?

General FERINGA. That is right, sir.

Senator McCLELLAN. Where will that be spent?

General FERINGA. That will be spent for levees, sir. We had a change of location because the right of way was not available at once. I will give it to you in just a minute, sir. That will be spent, sir, at locations named "Lester" and "Lake City."

Senator McCLELLAN. Is that $500,000 going to be adequate now?

General FERINGA. That will finish that piece in Craighead County and near Lake City. I would hate to use the word "adequate" with $500,000 for the St. Francis, because that is a tremendous project, and $500,000 is a mere pittance for a project of that importance, but again I speak in deference.

LOWER WHITE RIVER, ARKANSAS

Senator McCLELLAN. On the lower White we will probably have a witness here to testify for that levee district. You do not have anything in the bill for that?

General FERINGA. That is correct, sir.

Senator McCLELLAN. What is the importance of continuing that work?

General FERINGA. That project is partially complete and like any project, sir, we would like to get it completed.

Senator McCLELLAN. If no funds are granted for continuing it, is it going to leave it exposed?

General FERINGA. It leaves it exposed at the lower end. The levee is finished up to about Highway 70. That is right across the river from De Valls Bluff, below De Valls Bluff it is not finished. There is an element above that location also that is not finished.

CACHE RIVER

Senator McCLELLAN. You have no money in this bill for the Cache River, nor for the lower White, to continue those works?

General FERINGA. That is correct, sir.

Senator McCLELLAN. You have no money in that at all?

General FERINGA. That is correct, sir.

Senator McCLELLAN. Even if the $2,000,000 were restored, there would not be any money available for those two projects?

General FERINGA. That is correct, sir.

Chairman McKELLAR. Had you better ask him the next question? What did you recommend for those two projects this year?

General FERINGA. The Cache, as you know, is a new project. As I recall, under my own criteria which was issued to me, we were asked not to include new projects.

Senator McCLELLAN. The lower White is not a new project?

General FERINGA. No, sir.

Senator McCLELLAN. You did recommend $228,000 within ceiling for that?

General FERINGA. Yes, sir; that is correct.

Senator McCLELLAN. You recommended $228,000 and the budget did not grant anything?

General FERINGA. That is correct, sir.

Senator McCLELLAN. What will that $228,000 do and how important is it?

DES ARC PROTECTION LEVEE, ARKANSAS

General FERINGA. That will take care of the community of Des Arc.

Senator McCLELLAN. That is the Des Arc protection levee?

General FERINGA. Yes, sir.

Senator McCLELLAN. I am familiar with that.

General FERINGA. That was included in the Senate bill last year and fell by the wayside, as I understand it, in the $5,000,000 cut.

Senator McCLELLAN. It was in the $5,000,000 cut that it came out. It was authorized in the 1949 act, I believe, and then we got an appropriation for it last year. That is a city there of about 1,400 population.

General FERINGA. That is right, sir, a nice prosperous city.

Senator McCLELLAN. It is a little county seat and the levee has been completed on the opposite side of the river. It throws all the water now on this town. They even had to dismiss school down there for 3 weeks at one time, they could not even hold school. A little $228,000 levee will afford protection for them.

General FERINGA. It will afford complete protection, sir, and the $228,000 is all that is needed, no more is needed.

Chairman McKELLAR. Did you recommend that project?

General FERINGA. I did recommend it, yes, sir, within ceiling.

Senator McCLELLAN. You did recommend it within ceiling?

General FERINGA. Yes, I did.

Senator McCLELLAN. But the budget did not grant it. I may say to the members of the committee that that is something where the Government owes those people protection, having built the levee on the other side it raises the water level considerably in this town. It is a small item, and if anything can be included in the budget it should be included.

Let us go down to this Boeuf and Tensas project.

BOEUF AND TENSAS PROJECT, LOUISIANA

General FERINGA. Yes, sir, it is very important.

Senator McCLELLAN. I notice here the House has authorized $1,720,000.

General FERINGA. Yes, sir.

Senator McCLELLAN. Now last year you had only $675,000.

General FERINGA. That is correct, sir.

Senator McCLELLAN. That shows the budget has recognized the importance of it. I believe the budget authorized $1,800,000.

General FERINGA. They recognized the importance after an inspection by the principal engineer for the budget, who flew over the entire area with me and saw it.

Senator McCellan. I am gratified with the progress we are making, because I have been fighting for more funds on this project year after year, because it is a $20,000,000 project when completed, and until it is completed or substantially completed we have a large area, some 200,000 acres of land in Arkansas, where they just take a risk if they undertake to make a crop in that area. The work has to be done from an engineering standpoint by starting in Louisiana and working up.

General Feringa. That is right, sir.

HOUSE ACTION

Senator McClellan. Will this $1,720,000 that you have in the House bill enable you to get the work completed up to the Arkansas line?

General Feringa. No, sir, not anywhere near. It will take the work up to about Highway 80, which is a highway that goes between Vicksburg and Monroe.

Chairman McKellar. What would happen if we increased the amount in the Senate to $61,000,000?

General Feringa. In order to get to the Arkansas border you would have to have about three times as much as is now in the House bill.

Senator McClellan. I would not expect us to appropriate that much this year. I am just trying to determine the progress we are making. Now we have made considerable progress here in getting the budget to recognize the importance of this project and to recommend $1,800,000 this year.

General Feringa. I wonder if you will go back, sir, and read in the record, inasmuch as you have it before you, the amount of my recommendation, because I feel that is an extremely important project.

Senator McClellan. You recommended $1,987,000 within ceiling.

General Feringa. And $3,798,000 over ceiling.

Senator McClellan. In other words, if you were to get the money that you really need and could economically spend on the project next year, you would need the $3,798,000?

General Feringa. Senator McClellan, I have gone over this area and I think it is as important as any other I know of. All this area southeast of Pine Bluff is being opened up for agriculture. As they open it up, of course, drainage keeps on going farther south and farther south. Furthermore it cannot get in the Mississippi River and the only place the water can go is all the way down to Louisiana. Of course we have to open up from downstream. This channel is about 90 feet at the bottom, the width to which we are excavating. With the funds we now have and we have in the bill before you we will get in part to about Highway 80, which is the highway between Monroe and Vicksburg.

Senator McClellan. That is the more expensive part of the construction?

General Feringa. That is the most expensive part. As we go farther north it fortunately becomes less costly per mile because you do not have to excavate such a big channel. I am hoping rather desperately that the $2,000,000 will be restored, so as to get as much done as possible, and I am not using that as a means of "please give it to us."

Senator McCLELLAN. Neither am I, but I am trying to develop here what the difference is, what can be done if you have the other $2,000,000.

General FERINGA. We are getting good bids because we advertise this work in the spring. If we can get just a little bit of the work done here at Big Bayou [indicating] it will help these people around Dermott a whole lot and we will finally get into Arkansas.

Senator McCLELLAN. If we raise this back to the $1,800,000 that the Budget recommended and restored the $2,000,000, can you do it?

General FERINGA. We will try desperately to do it. I cannot make a promise, sir, but we will try desperately to do it.

Senator McCLELLAN. Do you think it will afford you an opportunity to do some work in Arkansas that will give some temporary relief?

General FERINGA. Yes; if we get the bids the way they are coming now.

CONSTRUCTION BIDS

Senator McCLELLAN. During the past year or so down there have your bids on dirt moving and on construction of levees been lower than the estimates? Have you not had that experience?

General FERINGA. In some places, yes, sir. In this place, yes.

Senator McCLELLAN. That was my understanding.

General FERINGA. This particular La Fourche River, yes, sir; not over the whole valley but for the La Fourche.

Senator McCLELLAN. Would be lower than the estimates?

General FERINGA. Yes, sir

Senator McCLELLAN. So that it is a very satisfactory project in that the cost is not exceeding certainly what was anticipated?

General FERINGA. I know that in that part of the country the farmers are having mass meetings nearly every day because it is a rainy summer and they are being hurt, some people have had to leave their farms because they cannot afford to keep them.

Senator McCLELLAN. Some of them have actually abandoned them.

General FERINGA. Abandoned their farms. Instead of having their normal agricultural economy of comparatively small farms, the smaller farms are being absorbed in large holdings and until this work is completed they will have no relief.

Senator McCLELLAN. I thank you, Mr. Chairman.

MEMPHIS HARBOR, TENN.

General FERINGA. Mr. Chairman, I would like to take enough of your time to talk about Memphis Harbor. That is a project for the whole United States and for the whole Valley. I know you will not ask about Memphis Harbor, but I want to talk about Memphis Harbor because I think that ought to be called McKellar Harbor.

Chairman McKELLAR. I am tremendously embarrassed at this time. I do not like to have my particular area get anything more than it is entitled to get. I have not said anything about it or asked any questions about it.

General FERINGA. I know that is so, sir. I remember one time when I was fortunate enough to be before the Senate Committee on Com-

merce, of which Senator Bailey was then chairman, they were considering the Overton Red River waterway. Senator Bailey in his fine way turned to Senator Overton and said, "Senator Overton, you are now excused." Senator Overton sort of bristled a little bit, wondered what was going on, and walked out. He subsequently was recalled and Senator Bailey said:

> Now we asked you to step out of this committee because we wanted to decide on the name for the Red River waterway and we decided it should be called the Red River Overton waterway.

I know he asked him to step out because he was a modest man. I know you did not ask about Memphis Harbor because you like to hide your light under a bushel.

Chairman McKellar. Do you think I should walk out?

General Feringa. No, sir, we need you.

The total cost of the Memphis Harbor project from the Federal standpoint is $21,600,000. There has been allotted to date $6,095,000. We have before us in the budget estimate $1,400,000 which, if the $2,000,000 cut sticks, will have to be cut to $1,350,000. Again, I am proud of being in the valley and I want to keep on accentuating the fact that the people in the valley do their part, that they pay for the lands, that they maintain the levees, that they have, as I stated before, already spent millions of dollars.

Now this Memphis Harbor project is one like that. The city of Memphis and county of Shelby I think, Senator, will have to put up $28,654,600, in order to develop that project.

Senator Ellender. That is in addition to the $20,000,000?

General Feringa. Yes sir, In addition to the Federal Government work.

Senator McKellar ought to explain this [indicating]. He can do it much better than I can. Here is the city of Memphis and it has a rather glorious history, too. You will notice the intensive development that I am pointing to at the lower part of the picture. Here is the Mississippi River flowing in a wide bend, around President's Island. Here is Tennessee Chute which was sort of a short cut for the Mississippi River. Above this picture where you cannot see it is Wolf River which is the present harbor and so crowded that you cannot get another boat in with a shoe horn.

Right above this point is that original bridge which I think you Senator McKellar got authorized in the Congress.

Chairman McKellar. Yes, I got that authorized by the Congress in 1914 with the most remarkable luck of any Congresman.

RESTORATIONS REQUESTED

General Feringa. May I sum up two points I want to make? One is that I believe the $2,000,000 should be restored because we started before the budget with $75,000,000. That amount was progressively decreased due to the critical Korean situation to $61,000,000. Therefore we have had our cut. We are doing our work by continuing contracts and therefore the $2,000,000 will, as I interpret the requirement of the House report, slow down our work.

The second point is that I hope there will be no restrictive legislation on personnel because we have made our cut in personnel. We are the prudent ones and I can prove by our actual figures that our personnel

has been cut. An arbitrary cut will hurt those organizations that have been thrifty and prudent.

Chairman McKellar. Will it take language in the bill to prevent your personnel from being cut? If it will, I hope you will prepare that language.

I think at this time the committee should recess until Monday at 10:30 a. m., and we will continue with General Feringa.

(Thereupon, at 1:30 p. m., Friday, July 6, 1951, the committee recessed until 10:30 a. m., Monday July 9, 1951.)